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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/630,864  | 07/31/2003  | Takashi Miyazawa     | 116747              | 9076             |
| 25944   | 7590        | 04/17/2006           | EXAMINER            |                  |
| OLIFF & BERRIDGE, PLC<br>P.O. BOX 19928<br>ALEXANDRIA, VA 22320 |             |                      | TUROC, DAVID P      |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 1762                |                  |

DATE MAILED: 04/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/630,864

Applicant(s)

MIYAZAWA, TAKASHI

Examiner

David Turocy

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 February 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 and 13-48 is/are pending in the application.
- 4a) Of the above claim(s) 21-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-20, and 32-48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/8/2006 has been entered.

### ***Response to Amendment***

2. Applicant's amendments, filed 2/8/2006, have been fully considered and reviewed by the examiner. The examiner notes the amendments to claims 13, 17, 40, 41, 45, and 46, therefore the 35 USC 112 1<sup>st</sup> and 2<sup>nd</sup> paragraph rejections to those claims have been withdrawn. Claims 1-11 and 13-48 remain pending in the instant application with claims 21-30 withdrawn due to a restriction requirement.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims have been considered but are moot because they are directed to limitations not present in the previously rejected claims and such limitations are discussed below in the new rejection below.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1-6, 8-11, 13-20, 31-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Abstract 2000-323276 by Seki et al, hereafter Seki in view of Japanese Patent Abstract 06-306181 by Hiraga et al, hereafter Hiraga '181 and further in view of Yoshino and the admitted state of the art as taught by the applicants description ("ASA").

Seki in view of Hiraga '181 and Yoshino are applied here as applied in the office action dated 11/8/2005. In addition, Seki discloses applying a solute and solvent mixture, including using more than one material to form a film (i.e. a first and second material) and Yoshino discloses ejecting the ink by heating the ink above the boiling temperature to gasify the ink and create a bubble to eject the ink (Column 18, lines 24-50); except the references fail to disclose ejecting a first and second material in the form of a gas and each of the films includes the material.

However, as evidenced by ASA, the lowering of the pressure within the process chamber to a vacuum pressure results in gasifying the materials to be ejected from the nozzle, see for example paragraph 0006.

Therefore, it is the examiners position, that at least a portion of the materials being ejected from the ink jet nozzle are being ejected as a gas because of the pressure in the chamber, as taught by the ASA results in gasifying the materials at lower temperatures, and Seki in view of Hiraga '181 and Yoshino discloses applying heat to the ink to create a gas bubble to properly eject the ink.

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Claims 40 and 41: Seki in view of Hiraga '181, Yoshino and ASA discloses co-deposition of a first and second material, wherein the ink as taught by Seki includes more than one material and additionally the claim does not provide a distinction between a first and second material. Additionally, Seki discloses a plurality of layers inclusive of those as claimed (paragraphs 0101-1019).

Claims 45-46: It would have been obvious to one of ordinary skill in the art to provide adjustability. Making portable, integral, separable, or adjustable. *In re Lindberg* 93 USPQ 23; *In re Larson et al.* 144 USPQ 347; *In re Dulberg* 129 USPQ 348; *In re Stevens* 101 USPQ 284.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seki in view of Hiraga '181, Yoshino and ASA and further in view of US Patent 6296354 by Hashimoto, hereafter Hashimoto.

Seki in view of Hiraga '181, Yoshino and ASA teach all the limitations of these claims as discussed above, however Seki in view of Hiraga '181, Yoshino and ASA fails to disclose detecting the light transmissivity of the material to determine ejection failure.

However, Hashimoto discloses determining the existence of material, during an ink jet printing, by using a reflection photosensor (Column 7, lines 51-57). Hashimoto discloses the degree of transmission of light depends on the light transmitted or reflected off of the material (Column 7, lines 51-57). Therefore Hashimoto reasonably

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suggests measuring the amount of light transmitted through the material and/or the amount of light reflected off the material are substitutes for each other for determining the material present. Therefore, it would have been obvious to one skilled in the art at the time of the invention to substitute the transmissible sensor, which measure the amount of light passing through the material; for the light reflective sensor as taught by Seki in view of Hiraga '181, Yoshino and ASA with the expectation of achieving equivalent results.

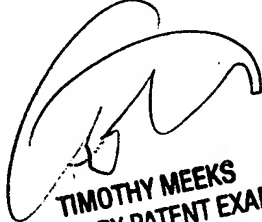
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Turocy whose telephone number is (571) 272-2940. The examiner can normally be reached on Monday-Friday 8:30-6:00, No 2nd Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Turocy  
AU 1762



**TIMOTHY MEEKS**  
**SUPERVISORY PATENT EXAMINER**